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2004 JUL 16 P 4: 32

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AZ CORP COMMISSION
DOCUMENT CONTROL

Arizona Corporation Commission

DOCKETED

JUL 16 2004

10 Attorneys for Arizona Water Company

DOCKETED BY

11 **BEFORE THE ARIZONA CORPORATION COMMISSION**

12 IN THE MATTER OF THE APPLICATION)
13 OF ARIZONA WATER COMPANY, AN)
14 ARIZONA CORPORATION, FOR)
15 ADJUSTMENTS TO ITS RATES AND)
16 CHARGES FOR UTILITY SERVICE)
17 FURNISHED BY ITS EASTERN GROUP)
18 AND FOR CERTAIN RELATED)
19 APPROVALS)

DOCKET NO. W-01445A-02-0619

**CERTIFICATE OF FILING
OF LOST WATER REPORT**

17 Decision No. 66849 of the Arizona Corporation Commission in the above-captioned
18 matter provides, among other things, that Arizona Water Company (the "Company") shall
19 implement the Lost Water Report proposed by Staff within 120 days of the effective date of said
20 Decision. The Lost Water Report is attached hereto as Attachment "A", and incorporated herein
21 by reference.

22 IT IS HEREBY CERTIFIED THAT on the day 16th of July, 2004, Arizona Water
23 Company filed with the Arizona Corporation Commission, Docket Control Division, at its main
24 office located at 1200 West Washington Street, Phoenix, Arizona, an original and thirteen (13)
25 copies of a Lost Water Report, as ordered by Decision No. 66849.

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RESPECTFULLY SUBMITTED this 16th day of July, 2004.

ARIZONA WATER COMPANY

By: Robert W. Geake
Robert W. Geake
Vice President and General Counsel
Arizona Water Company
P. O. Box 29006
Phoenix, AZ 85038
Attorney for Applicant

AN ORIGINAL and thirteen (13) copies of the
foregoing filed this 16th day of July, 2004 with:

- Docket Control
- Arizona Corporation Commission
- 1200 W. Washington
- Phoenix, AZ 85007

- And copies of the foregoing,
mailed/delivered this 16th day of July, 2004, to:

- Norman D. James
- Jay L. Shapiro
- FENNEMORE CRAIG
- 3003 N. Central Avenue, Suite 2600
- Phoenix, AZ 85012
- Attorneys for Arizona Water Company

- Dwight Nodes
- Administrative Law Judge
- Hearing Division
- Arizona Corporation Commission
- 1200 W. Washington
- Phoenix, AZ 85007

- Christopher Kempley, Chief Counsel
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ORIGINAL

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July 16, 2004

Mr. Ernest Johnson
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

Re: Eastern Group Lost Water Report – ACC Decision No. 66849

Dear Mr. Johnson:

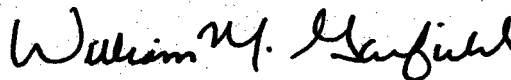
Attached you will find Arizona Water Company's (the "Company") Eastern Group Lost Water Report (the "Report") which concerns the Company's Bisbee and Superior water systems as required under the above-referenced Decision of the Arizona Corporation Commission (the "ACC"). The Report and the information contained in this submittal are based on statistics for the twelve-month period ending May 31, 2004.

Please note that the Report does not include the Company's Apache Junction, Miami, San Manuel, Oracle, Winkelman or Sierra Vista water systems, as these systems have water losses less than ten percent. For your reference, these water systems have the water loss percentages listed below.

<u>WATER SYSTEM</u>	<u>WATER LOSSES (%)</u>
Apache Junction	6.9
Miami	8.2
San Manuel	8.2
Oracle	9.9
Winkelman	2.0
Sierra Vista	4.8

The Company considers the stewardship of its water distribution system to be of the utmost importance and is pleased to submit the Report to you and the ACC Staff.

Very truly yours,



William M. Garfield
President

Enclosures
mcm

E-MAIL: mail@azwater.com

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ARIZONA WATER COMPANY

EASTERN GROUP LOST WATER REPORT

Submitted To: Ernest Johnson
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Prepared By: William M. Garfield, President
Arizona Water Company
P.O. Box 29006
Phoenix, Arizona 85038-9006

Date: July 12, 2004

Copy To: Lyndon Hammond
Engineering Section, Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

PURPOSE OF LOST WATER REPORT

The purpose of this Lost Water Report ("Report") is to report to the Arizona Corporation Commission ("ACC") Staff about water systems in Arizona Water Company's (the "Company") Eastern Group whose water losses exceed ten percent and to propose cost-effective solutions for reducing such losses where it is feasible to do so, as specified in ACC Decision No. 66849 (March 19, 2004) page 29, lines 12-14 and page 30, lines 3-5.

BASIS OF LOST WATER DETERMINATION

The following definitions are used in this Report, and unless otherwise stated, all calculations are based on 12-month ended statistics.

1. Water Produced – *all potable water received from any water source that is introduced into the Company's water distribution system.*
2. Water Used – *all potable water delivered to customers or beneficially used that is metered or otherwise quantified.*
3. Lost Water – *all potable water that is lost due to uncontrollable circumstances, such as main breaks, service leaks, unplanned releases, water theft and water delivered to customers that was not fully recorded by the water meters.*

WATER SYSTEMS WITH LOST WATER GREATER THAN 10%

For the twelve-month period ending May 31, 2004, the following Eastern Group water systems had Lost Water greater than ten percent.

WATER SYSTEM	WATER PRODUCED 1000 Gallons	WATER USED 1000 Gallons	LOST WATER	
			1000 Gallons	Percent
Superior	131,165	111,407	19,758	15.1
Bisbee	394,337	311,222	83,115	21.1

POTENTIAL WAYS TO REDUCE LOST WATER

1. Reduce Lost Water caused by water main, service line, fire hydrant and other water distribution system component leaks and breaks by locating sources of leaks and breaks, and repairing and replacing water mains, service lines, fire hydrants and other water distribution system components that are the sources of such leaks and breaks. (Note: Lost Water due to water main and service leaks and breaks is not lost to the aquifer since the majority of such water returns to the aquifer through incidental recharge.)

2. Reduce water theft by identifying sources of water theft and pursuing criminal prosecution of water thieves and/or through billing for unauthorized use of water.
3. Reduce unplanned water system releases through installation of Supervisory Control and Data Acquisition ("SCADA") systems and routine maintenance of control system components and control valves, such as pressure reducing and pressure relief valves.
4. Develop and implement a meter maintenance program to maintain water meter accuracy.
5. Review current and new meter applications to ensure proper meter applications.

WATER MAIN AND SERVICE LINE MAINTENANCE PROGRAM

The Company reduces Lost Water due to water main leaks and breaks through timely repairs and replacements. The Company schedules repairs of minor water main leaks as soon as possible, but in the case of main breaks, the Company makes repairs immediately. Sources of Lost Water due to unidentified water main leaks are more problematic as they are not always easily identifiable except through more advanced methods of detection, such as leak detection equipment and leak surveys. The Company has previously contracted with leak survey professionals to perform system wide leak surveys in Superior and Bisbee. Although successful in locating leaks the cost of the leak surveys was not offset by cost savings.

Likewise, the Company reduces Lost Water due to service line leaks and breaks through timely repairs and replacements. The Company schedules repairs of service leaks and breaks for repair as soon as possible. Although service leaks are also difficult to identify, meter readers report observed service leaks in their normal course of reading meters.

Over the past four years the Company has expended on average the following amounts on water main maintenance, water main replacements, service line maintenance and service line replacements for the Superior and Bisbee water systems:

WATER SYSTEM	WATER MAIN MAINTENANCE (\$/YEAR)	WATER MAIN REPLACEMENT (\$/YEAR)	SERVICE LINE MAINTENANCE (\$/YEAR)	SERVICE LINE REPLACEMENT (\$/YEAR)	TOTAL (\$/YEAR)
Bisbee	\$53,200	\$30,000	\$45,600	\$35,000	\$163,800
Superior	\$16,800	\$12,000	\$18,950	\$16,000	\$63,750

METER MAINTENANCE AND APPLICATION PROGRAM

The Company's Engineering Department reviews all new meter applications prior to establishing water service. Typically, new residential subdivisions require the installation of 3/8-inch by 3/4-inch or 1-inch water meters. Non-residential meter applications involve meters 1-inch or larger and can result in wide ranges of flows that could also include fire flows. The

Company's Engineering Department chooses the application that best fits the overall range of customer flows expected. It should be noted that all water meters have ranges of inaccuracy in registration.

The most important program to reduce Lost Water is the Company's meter maintenance program. This program establishes the criteria upon which meters are removed for repairs or replacement. The Company's Meter Shop in Coolidge has established change-out criteria based on total gallons and length of time in service for each water system and for each size and type of meter.

Over the past four years the Company has expended on average the following amounts on meter maintenance and meter replacements for the Superior and Bisbee water systems:

WATER SYSTEM	METER MAINTENANCE (\$/YEAR)	METER REPLACEMENT (\$/YEAR)	TOTAL (\$/YEAR)
Bisbee	\$9,145	\$2,000	\$11,145
Superior	\$3,415	\$1,000	\$4,415

The Coolidge Meter Shop performs periodic tests on each water system's water meters on a random sampling basis for meters that have reached the number of years or total gallons specified in each water system's meter maintenance program to provide an ongoing assessment of the suitability of meter change-out criteria for each water system. In this manner, the Company ensures that meter accuracy is maintained within prescribed limits and demonstrated through meter testing.

POTENTIAL COST SAVINGS FROM EFFORTS TO REDUCE LOST WATER

Efforts to reduce Lost Water must be based on economic factors resulting in cost-effective means to reduce Lost Water. In the case of Lost Water due to water main and service line leaks and breaks, the cost to the Company and its customers is the cost to produce water, which includes power, chemical and maintenance costs. The Company calculates the cost to produce water for each water system for use in evaluating cost-effective solutions to reduce Lost Water. The following lists the cost to produce water for the Superior and Bisbee water systems and the potential savings if Lost Water could be reduced to ten percent:

WATER SYSTEM	CURRENT LOST WATER (1000 Gallons)	10% LOST WATER LIMIT (1000 Gallons)	POTENTIAL SAVINGS (1000 Gallons)	COST TO PRODUCE WATER (\$/1000 Gallons)	POTENTIAL SAVINGS (\$/YEAR)
Bisbee	83,115	34,580	48,535	\$.719	\$34,900
Superior	19,758	12,379	7,379	\$1.124	\$8,300

In order for the Company to achieve cost-effective solutions to reduce Lost Water, the Company must carefully balance the cost of locating and repairing water leaks against the potential cost savings to ensure that it does not increase overall costs to its customers. It is also important for the Company to periodically evaluate the results of its efforts to reduce Lost Water.

BISBEE, EFFORTS TO REDUCE LOST WATER

Bisbee is one of the Company's oldest water systems, with water mains dating back to the early 1900's. In fact, steel water mains dating back to 1906 are still in service in the Warren area of Bisbee. The water source for Bisbee comes from wells located in Naco, Arizona, near the United States border with Mexico and is transported to the main system through five miles of transmission main. The water distribution system totals approximately sixty-seven miles in length and serves just over three thousand four hundred customers. The customer base has been relatively stable over the past twenty years, but the economy has not been stable since the local mining company, which had historically been the major source of employment, discontinued mining operations in the late 1970s.

Water pressures in the transmission main from the well field approach 600 pounds per square inch gauge ("PSIG"). This pressure is higher than that typically encountered in a municipal water transmission main and is a result of the topography that surrounds the Bisbee area. Leaks are a function of pipe condition, which are related to the age, type of material, soil corrosivity and water corrosivity, among other factors, and are directly proportional to water pressure. For a given size of hole in the pipe wall or pipe joint, the greater the pressure, the greater the rate of leakage.

The Company's experience with its Bisbee water system demonstrates that the primary source of Lost Water is water main and service line leakage. Lost Water in the Bisbee water system approached thirty percent in 1992. Since then the Company increased its efforts to reduce Lost Water and the Company's current program has been successful in keeping Lost Water under control. Any increases in costs for locating and repairing water leaks beyond current spending levels would result in increased costs to the Company's Bisbee customers, and would not reduce Lost Water to ten percent.

The Company has found in the past that the use of outside contractors to perform a leak detection survey in Bisbee was not offset by cost savings. The cost to perform another such survey for the Bisbee water system could easily exceed twenty thousand dollars. Since Bisbee is an aging water system and leaks occur on a frequent basis, it would not be cost-effective to engage the services of an outside contractor.

The Company's Coolidge Meter Shop's meter maintenance program and its ongoing meter testing program is adequate to maintain the prescribed meter accuracy. Additional efforts in this area would not be expected to result in appreciable, cost-effective reductions in Lost Water.

The Company is soliciting bids from vendors on leak correlation equipment, which can be used to identify the approximate location of water leaks without the need to inspect each section of the distribution system. This leak correlation equipment will be purchased for use in all Company water systems including the Bisbee water system.

The Company's SCADA control system is relatively new and there has been no appreciable Lost Water from failure of the system. Additional efforts in this area would not be expected to result in appreciable, cost-effective reductions in Lost Water.

Water theft has not resulted in significant Lost Water. Additional efforts in this area would not be expected to result in appreciable, cost-effective reductions in Lost Water.

As part of the City of Bisbee's project to replace a large portion of its aging wastewater collection system, the Company is working with the City to coordinate construction efforts to take advantage of the opportunity to replace aging water mains and services lines when the City replaces its sewer collection lines, resulting in significant cost savings to the Company. It is expected that Bisbee's higher-than-normal Lost Water and water main and service line maintenance costs will be reduced as a result of replacing such aging mains and service lines.

Based on all of the above, the Company believes it should maintain its current efforts to reduce Lost Water in the Bisbee water system.

SUPERIOR, EFFORTS TO REDUCE LOST WATER

Superior is also one of the Company's oldest water systems, with water mains dating back to the early 1920's. The water source for Superior comes from wells located near Florence Junction, Arizona, nearly twenty-three miles from the Town of Superior. The water distribution system totals approximately forty-nine miles in length and serves fewer than one thousand three hundred customers. The customer base has been declining since the local mining company, which had historically been the major source of employment, discontinued mining operations in 1996. The economy of Superior is currently in a depressed state.

Water pressures in the transmission line from the well field approach 1000 PSIG. This pressure is much higher than that typically encountered in a municipal water transmission main and is a result of the topography that surrounds the Superior area. Leaks are a function of pipe condition, which is related to the age, type of material, soil corrosivity and water corrosivity, among other factors, and are directly proportional to water pressure. For a given size of hole in the pipe wall or pipe joint, the greater the pressure, the greater the rate of leakage.

The Company's experience with its Superior water system demonstrates that the primary source of Lost Water is water main and service line leakage. Lost Water in the Superior water system approached thirty percent in 1992. Since then the Company has been able to reduce Lost Water and the Company's current program has been successful in keeping Lost Water under control. Any increases in costs for locating and repairing water leaks beyond current spending

levels would result in increased costs to the Company's Superior customers, and would not reduce Lost Water to ten percent.

The Company has found in the past that the use of outside contractors to perform a leak detection survey in Superior was not offset by cost savings. The cost to perform another such survey for the Superior water system could easily exceed fifteen thousand dollars. Since Superior is an old water system and leaks occur on a frequent basis, it would not be cost-effective to engage the services of an outside contractor.

The Company's Coolidge Meter Shop's meter maintenance program and its ongoing meter testing program is adequate to maintain the prescribed meter accuracy. Additional efforts in this area would not be expected to result in appreciable, cost-effective reductions in Lost Water.

The Company is soliciting bids from vendors on leak correlation equipment, which can be used to identify the approximate location of water leaks without the need to inspect each section of the distribution system. This leak correlation equipment will be purchased for use in all Company water systems including the Superior water system.

The Company's SCADA control system was recently updated and there has been no appreciable Lost Water from failure of the system. Additional efforts in this area would not be expected to result in appreciable, cost-effective reductions in Lost Water.

Water theft has not resulted in significant Lost Water. Additional efforts in this area would not be expected to result in appreciable, cost-effective reductions in Lost Water.

It is important to note that Superior's water sales per customer and water deliveries per foot of pipe are near the lowest of all Company water systems and have influenced Superior's Lost Water when expressed as a percent of water produced. Lost Water per foot of pipe is a more relevant standard, and an analysis of the Superior water system efficiency must consider the operating pressures within this system, the aging pipe, low water system sales, higher-than-normal operating pressures and the relatively-high operating expense per customer when comparing this water system's Lost Water to the ten percent Lost Water standard.

Based on all of the above, the Company believes it should maintain its current efforts to reduce Lost Water in the Superior water system.

In summary, the Company proposes to continue to reduce Lost Water in its Bisbee and Superior water systems through the cost-effective efforts currently being followed, as identified above, which have appreciably reduced the percentage of Lost Water. The Company will evaluate the results of these efforts and adjust its practices as necessary to achieve and maintain cost-effective reductions in Lost Water for all of its Eastern Group water systems.